Energy Services and PPP for COVID Recovery

Mits Motohashi
World Bank

PRIF Week
October 14, 2021
1. Impacts of COVID-19 on energy sector and PPPs
2. Energy sector needs and opportunities in the Pacific
3. Towards resilient recovery
Impacts of COVID-19 on energy sector

Energy Demand
- Electricity consumption

Energy Supply
- Power purchase
- Fuel supply
- New build

Sector Finances
- Revenue
- Investment
Change in Electricity Demand by Region

Average crude oil spot prices (US$/barrel)

Electricity has been growing twice as fast as total energy demand in recent years, and its estimated 2% fall in 2020 is less than half that of overall energy demand.

Source: IEA World Energy Outlook 2020

Source: IEA Key World Energy Statistics 2021
...and in the Pacific

PNG Power Limited (Papua New Guinea)
-12%
Drop in peak demand during the first 14 days of outbreak

Solomon Power (Solomon Islands)
-13%
Drop in peak demand in April 2020

Chuuk Public Utility Corporation (FSM)
-40%
Decrease in sales during the first week of outbreak

-23%
Reduction in diesel fuel consumption for power generation

Nauru Utilities Corporation (Nauru)

Source: PNG Power Limited
Source: Solomon Power
Source: Pacific Power Association
Impacts of COVID-19 on PPPs

Primary COVID impacts
- Low growth, macroeconomic volatility
- Declines in user demand
- Supply disruptions
- Added health and safety regulations

Secondary COVID impacts
- Currency volatility
- Service standards compliance risk
- Inflation
- Reduced access and increased cost of credit
- Payment defaults
- Service delays
- Government policy actions

Potential impact on PPPs
- Liquidity risks
- Default risks
- Insolvency risks
- Increased costs

Compounded risks

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Private Participation in Infrastructure (PPI) fell in 2020

Investor State Dispute Settlement Cases in the Electricity, Gas, Steam and Air Conditioning Supply sectors (1998-2020)

World Bank Private Participation in Infrastructure 2020 Annual Report

UNCTAD Investment Dispute Settlement Navigator
But there are early signs of recovery in terms of energy demand and investment, risk spreads...
...and of market capitalization and performance

Emerging Markets Equity Performance

Source: Lazard Outlook on Emerging Markets 2021
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The challenges for the Pacific energy sector remain formidable

Households with access to electricity

Fuel imports as a share of GDP (2012, 2018/19)

Source: Pacific Region Infrastructure Facility (PRIF) Pacific Infrastructure Performance Indicators (PIPI) 2021
### The Pacific Governments are committed and have ambitious targets

<table>
<thead>
<tr>
<th>Country</th>
<th>Energy Access (%)</th>
<th>Renewable Energy (%)</th>
<th>Clean Cooking Access (%)</th>
<th>EE Target (% reduction from baseline)</th>
<th>GHG Reduction (% from baseline)</th>
<th>Investment Cost Indicated in NDCs (energy-related) (US$M)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fiji</td>
<td>89-100 (by 2030)</td>
<td>27 100 (by 2030)</td>
<td>28</td>
<td>5.5 (by 2030)</td>
<td>30 (by 2030)</td>
<td>2,970</td>
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<tr>
<td>Kiribati</td>
<td>100</td>
<td>46 70 (by 2025)</td>
<td>4</td>
<td>20 (by 2025)</td>
<td>12.8 (by 2030)</td>
<td>11.1</td>
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<tr>
<td>Marshall Islands (RMI)</td>
<td>96 100 (by 2020)</td>
<td>12 100 (by 2050)</td>
<td>65</td>
<td>20 (by 2030)</td>
<td>32 (by 2025)</td>
<td>175</td>
</tr>
<tr>
<td>Micronesia (FSM)</td>
<td>82 100 (by 2027)</td>
<td>2 84 (by 2037)</td>
<td>8</td>
<td>50 (by 2020)</td>
<td>28 (by 2025)</td>
<td>n.a.</td>
</tr>
<tr>
<td>Nauru</td>
<td>100</td>
<td>1 n.a.</td>
<td>90</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
</tr>
<tr>
<td>Palau</td>
<td>100</td>
<td>0 45 (by 2025)</td>
<td>100</td>
<td>35 (by 2025)</td>
<td>22 (by 2025)</td>
<td>n.a.</td>
</tr>
<tr>
<td>Papua New Guinea</td>
<td>15 70 (by 2030)</td>
<td>50 78 (by 2030)</td>
<td>8</td>
<td>n.a.</td>
<td>483</td>
<td>255.4</td>
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<tr>
<td>Samoa</td>
<td>98</td>
<td>27 100 (by 2025)</td>
<td>35</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
</tr>
<tr>
<td>Solomon Islands</td>
<td>14-20 48 (by 2020)</td>
<td>49 100 (by 2025)</td>
<td>9</td>
<td>10.7 (by 2019)</td>
<td>30 (by 2030)</td>
<td>n.a.</td>
</tr>
<tr>
<td>Tonga</td>
<td>89 100 (by 2020)</td>
<td>1 70 (by 2030)</td>
<td>50</td>
<td>9 (by 2020)</td>
<td>n.a.</td>
<td>n.a.</td>
</tr>
<tr>
<td>Tuvalu</td>
<td>94</td>
<td>13 100 (by 2025)</td>
<td>43</td>
<td>30 (by 2020)</td>
<td>60 (by 2025)</td>
<td>85</td>
</tr>
<tr>
<td>Vanuatu</td>
<td>28-33 100 (by 2030)</td>
<td>36 100 (by 2030)</td>
<td>8</td>
<td>13 (by 2030)</td>
<td>35 (by 2030)</td>
<td>n.a.</td>
</tr>
</tbody>
</table>

Adopted from Santagata & Rawali (2021) Status of Energy Access & Climate Action in PICTs
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Approaches towards a resilient recovery of energy sector will be multifaceted

Country ownership and leadership

- Systematically address poverty and inequality, COVID-19 and climate change
- Accelerate investments and at scale in solutions that sustain natural capital
- Invest in risk management and to prevent and prepare for climate change, pandemics, natural hazards, and other shocks
- Invest in human capital and strengthen policies for inclusive growth to create jobs and tackle exclusion and inequality
- Foster international and regional cooperation
Renewable energy deployment will promote socio-economic development

**ELECTRICITY PRODUCTION & ACCESS**

Better security of supply
With domestic power supply

**PARTICIPATION TO THE RE VALUE CHAIN**

Participation of the local industry to the value chain of RE projects

**LOCAL DEVELOPMENT**

Inclusive development increasing the local communities’ livelihoods

**HUMAN CAPITAL**

Capacity building with a specific focus on women

An opportunity to build a sustainable ecosystem, resilient in the context of climate change and well-articulated in a timely manner, leveraging new opportunities offered by the scaling-up of renewable energy
Building blocks will need to be set right for sustainable renewable energy deployment.

**Enabling Environment**
(upstream support incl. generation & transmission planning, VRE integration, regulatory and strategic support)

**Critical Public Investments**
(transmission lines, solar/wind park infrastructure and PPP mini-grids/SHS)

**Robust Procurement**
(downstream TA support incl. transaction advisory, feasibility studies, E&S instruments)

**Risk Mitigation Coverage**
(guarantees for IPPs for grid-connected and off-grid projects, geothermal resource de-risking)

Leveraging private investments at scale while maximizing socio-economic benefits

Blended with climate finance

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Steps for Government – back to the fundamentals

**Planning Phase**
- Least-Cost Electrification Plan
- Least-Cost Generation Plan
- Least-Cost Transmission Plan
- VRE Integration Studies
- List of Key Grid Upgrade for VRE Integration

**Strategy Phase**
- Sustainable Off-Grid RE Targets
- Sustainable Grid Connected RE Targets
- Deployment Scheme selection
- High-level bidding framework
- Agreed Government Support & Legal Changes Needed
- Socio-economic benefits strategy
- RE deployment targets and timeline

**Implementation Phase**
- Sustainable RE Program
- Public party technical preparation of phase 1 of Program
- IPP Selection Procurement Conducted
- Procurement Ready
- Risk Mitigation Instruments in Place
- Final contractual arrangements
- Public investment if any for RE parks

**Outcomes**
- Public Investment in Grid Completed
- VRE Grid Integration Enabled

Transforming the energy sector in Solomon Islands

Six Concessional Financing Institutions: International Development Association (IDA), Abu Dhabi Fund for Development (ADFD), Asian Development Bank (ADB), Green Climate Fund (GCF), Australia, Korea EDCF
Accelerating electrification in PNG

- Electricity access for 70% of the population by 2030
- Comprehensive least-cost investments in on-grid infrastructure and off-grid market development
- Enabling policy and regulatory framework for energy access
- Institutional and capacity development
Finally

Investment needs are large and the investment environment is under heightened uncertainty.

De-risking is key – stay vigilant and address challenges.

Attention to job creation opportunities as part of infrastructure spending and fiscal stimulus.

Opportunity for revisiting the basic sector fundamentals – planning, operations, financing.

Harness innovation in digital and other technologies and operation practices.

Focus on solid pipeline project identification and preparation.

Government roles are crucial for mobilizing private capital and climate finance.
Thank you!

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